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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,096	02/02/2004	Elizabeth Colbert	015291-088	5764
21839 7590 06/04/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER MAKI, STEVEN D	
			ART UNIT 1733	PAPER NUMBER
			MAIL DATE 06/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/768,096	COLBERT, ELIZABETH	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2007 and 27 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2) **Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savoly et al (US 5,714,001) in view of Stephens (US 5,803,596) and admitted prior art (figure 3).**

Savoly et al discloses a surfactant composition (foaming agent) comprising a mixture of molecules conforming to a specified formula II. See col. 2 line 27. This surfactant composition (foaming agent) is a "nonprotenaceous surfactant" as described in dependent claim 7. **Savoly et al explicitly contemplates and teaches using the foaming agent in (1) the manufacture of gypsum boards, (2) the manufacture of cement, or (3) in foaming applications such as firefighting foams.** See col. 1 lines 10-14, col. 3 lines 42-45, col. 5 lines 54-55. As to manufacturing a gypsum board composition, Savoly et al teaches generating foam from a mixture of a liquid foaming agent, air and water in a suitable foam generating apparatus, adding the pregenerated foam to a board core slurry mix (mixture of gypsum and water), depositing the foamed gypsum on a moving paper substrate supported on a long moving belt, applying a second paper substrate to the top of the slurry, cutting the board after sufficient setting and then passing the cut boards to a dryer. See col. 5 lines 36-53. Savoly is silent as to the foam generating apparatus comprising a tube, first inlet, second inlet, tapered section and venturi.

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Stephens, directed to **high volume production of aqueous foam for preparing foamed cement grouts or for use as firefighting foams**, discloses mixing foam concentrate and water within a pump 50, discharging the mixture of water and foam concentrate (foam solution) through line 56, and supplying compressed air and foam solution to a **VENTURI MIXING UNIT 146** (the compressed air being supplied from compressed air tank 60 and the foam solution being supplied from line 56) wherein

... flow of compressed air entering from the side of the venturi unit 146 creates a vacuum effect which picks up the foam solution entering from the bottom of the venturi, so that the two components are mixed and forced out the discharge side of the unit.

See column 7 lines 45-50. Stephens teaches mixing the foam with cement slurry using pump 70 to form a foamed cement grout mixture and discharging the foamed cement grout mixture from nozzle 80. See figure 3.

The admitted prior art discloses a **foam generating gun ("VENTURI MIXING UNIT") for use in the firefighting industry** comprising a "tube", primary inlet, secondary inlet, tapered section and venturi. The admitted prior art teaches supplying compressed air through the primary inlet, applying foam medium source (surfactant and water) to the secondary unit, mixing the foam medium and air with the foam generating gun ("VENTURI MIXING UNIT") to create foam, and ejecting the foam through a discharge outlet of the foam generating gun wherein as compressed air passes rapidly through the main body of the foam generating gun, a venturi or suction effect draws the foam medium through the secondary inlet. See figure 3 and paragraphs 11, 12 and 16 of specification.

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As to claims 1-8, it would have been obvious to one of ordinary skill in the art to use a venturi mixing unit as the foam generating apparatus in Savoly et al's process of manufacturing gypsum board wherein the venturi mixing unit comprises a tube, first inlet, second inlet, tapered section and venturi since (1) Savoly, directed to a foaming agent for generating foam for gypsum boards, cement or firefighting, teaches pregenerating foam for a continuous gypsum board manufacturing process using a foam generating apparatus, (2) Stephens, directed to continuous production of foam for applications such as cement or firefighting, suggests mixing compressed air and aqueous foam solution using a foam generating apparatus in the form of a VENTURI MIXING UNIT 146 such that foam of desired density is continuously produced, and (3) the admitted prior art teaches mixing compressed air and foam medium (surfactant and water) using a foam generating gun ("VENTURI MIXING UNIT") to create foam wherein, as shown in figure 3, the foam generating gun ("VENTURI MIXING UNIT") comprises a tube, first inlet, second inlet, tapered section and venturi. Savoly et al's teaching to use the foaming agent to produce foam for gypsum board, cement and firefighting directs one of ordinary skill in the art to look to art such as Stephens and the admitted prior art for suitable foam generating apparatus. Stephens and the admitted prior art disclose a "VENTURI MIXING UNIT" as being a suitable foam generating apparatus wherein Stephens suggests the use of such a foam generating apparatus to create foamed cement and the admitted prior teaching the specific construction of the foam generating apparatus. The claimed "foam generating apparatus" as set forth in

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claim 1 and 4 reads on the foam generating apparatus ("VENTURI MIXING UNIT") disclosed by the admitted prior art.

As to claims 2 and 3, note the tapered region of the foam generating gun of the admitted prior art. The claimed length of over six inches (claim 3) for the tapered region would have been obvious and could have been readily determined without undue experimentation in view of the admitted prior art's teaching to create foam using a foam generating gun having a tapered region as shown in figure 3.

As to claims 4 and 8, note the venturi and smooth interior surface of the admitted prior art shown in figure 3.

As to claim 6, it would have been obvious to one of ordinary skill in the art to adjust a size of the bubbles in the mixture output from the tube by adjusting a pressure of the air applied to the tube in view of Stephens teaching to adjust the density of the foam (and thereby adjust bubble size) by adjusting the relative flow rates of the foam solution and air.

As to claim 7, note the foaming agent of Savoly et al.

Remarks

3) Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

US 3,430,865 to McDougall (figure 2), US 3,388,868 to Watson et al (figure 4), US 6,716,293 to Taymourian et al (figure 4) and Japan 08-024746 (figure 1) are cited of interest.

4) No claim is allowed.

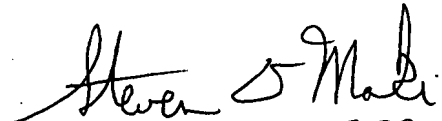
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5) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
May 26, 2007


STEVEN D. MAKI
PRIMARY EXAMINER 5-29-07

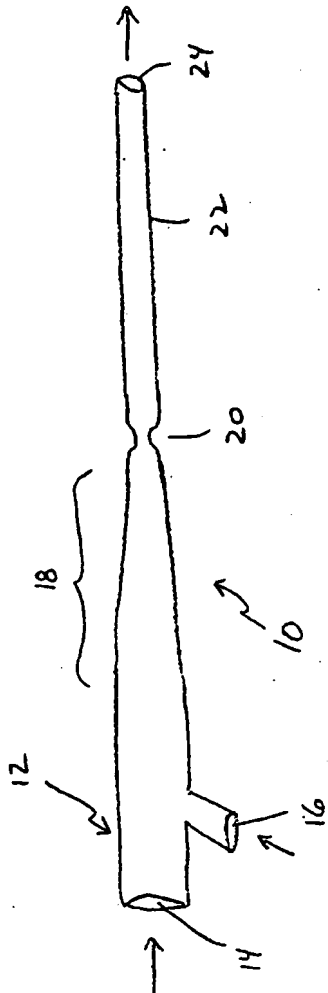


FIG. 1

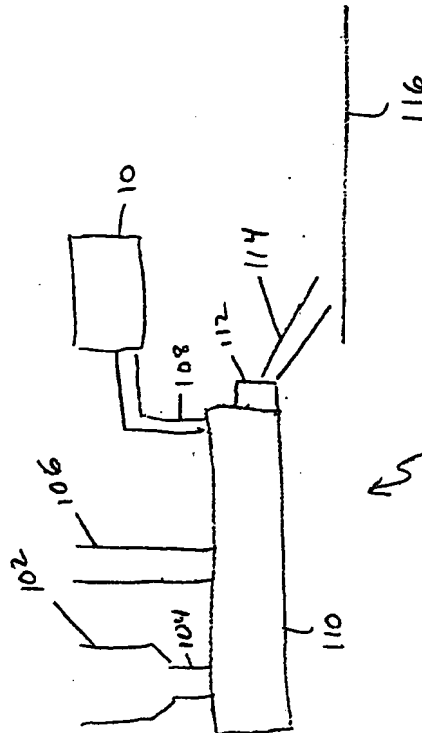


FIG. 2

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 accepted
 Jm
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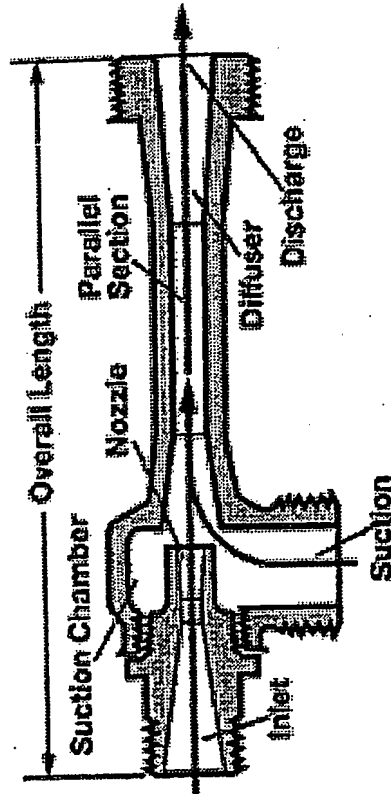


FIG. 3 PRIOR ART